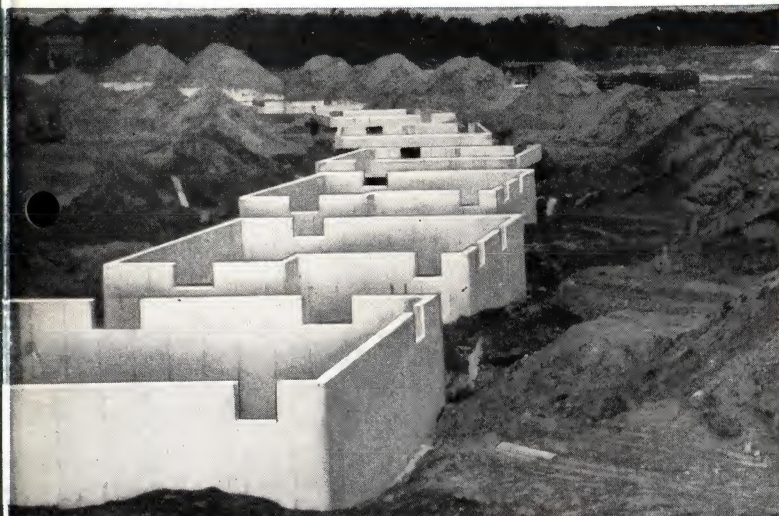


SYMONS FORMING SYSTEM

RESIDENTIAL • COMMERCIAL

la 21:
Sy 31:
31:



One set of forms used 120 times on one project with forms still good for many more uses, Reed Const. Co., Mishawaka, Ind.



Special 7'-2" forms made to order for Colpaert Realty Co., South Bend, Indiana. Concrete screeded at top of forms.



Inside corner set-up showing "high strength" 2' x 4' panels attached. Simplicity of forms, hardware and ties makes for speed in erection and stripping.

SYMONS CLAMP & MFG. CO.

CHICAGO 39, ILLINOIS

SCOPE OF THIS CATALOG

The builder engaged in home construction will obtain special help from the Symons Forming System. In these pages you will find the types of forms, hardware, and supplementary equipment which we have always in stock, ready to fill your needs promptly and efficiently. You can rely on Symons service.

SCOPE OF SERVICE

Symons service is on the job from start to finish. Our engineering staff will help you solve your forming problems. Our salesmen are trained and eager to offer excellent advice on form erection, pouring, and stripping methods. We furnish form layouts and job sheets on request and without charge or obligation. Symons Forms can be purchased outright or rented with purchase option, rental to apply on the purchase price.

advantages of SYMONS FORMING SYSTEM

overall service Symons Forming System offers you prompt service and a real saving in time, labor, and material. We carry a complete stock of forms, hardware, and ties, in a variety which makes the Symons system suitable for any type construction job. Symons standardized panels with rugged Symons fittings make possible simple, easy erection and removal which produce true, smooth walls at minimum cost in time and labor.

erecting Symons Forms are joined, tied, and spread by a simple, sturdy device in a single operation. They locate on any side, permitting their use for any wall height. Loop-end ties hold both ways without washers or walers. Walers are optional for alignment. The beam action design safely withstands heavy concrete pressure.

stripping You need no prys or bars to remove the wedges from Symons Forms. Because ties go between the forms, panels pull away easily. The tiny holes left by the small diameter ties are easily filled. A mere twist of the loop breaks the tie.

life of form The Symons Forming System assures less wear on the forms, and the forms can be used for as many as one hundred or more construction jobs. The ease with which the forms are stripped from the concrete adds to their life and their usability.

How Symons Forms Have Helped Home Builders Cut Foundation Costs

the mass producer of homes

In a \$14,000,000 building program Symons Forms were used to aid in meeting a schedule of ten houses per day. They can be erected and stripped quickly, are safe, require a minimum amount of waling and bracing, and produce smooth, good-looking walls.

In constructing a house with a full basement, the basement slab was poured before the house walls were erected, allowing cleaner and more efficient handling of materials during construction.

There is a considerable saving in time when the concrete is poured to the full height of the forms, and a better looking and more level wall is achieved. Symons has available standard size forms of 4, 6, and 8 feet height; panel widths are 2 feet. Special height forms can be built to meet requirements. For the project pictured at right, special 7 foot forms were built.

In this same project each crew used two sets of forms per day. A set was erected one day, and the foundation was poured on the following day while the other set of forms was being stripped and erected. After stripping, exposed ties are broken back, exterior walls asphalt covered below grade and back-fill placed around the walls.

Our engineering staff furnishes complete form layouts and job cost sheets on form work at no charge to the contractor. Our field men give on-the-job service with recommendation of forms and hardware needed, also instruction on the most efficient method of setting up forms; and arrangement for special deliveries when last minute problems arise.

the custom builder of homes

While an experienced crew is faster and more efficient, just one man can set-up Symons forms. They are light and easily handled. The hardware is easy to adjust. The Two-Way Form Tie holds the forms securely to the required wall thickness without washers, spreaders or walers. The slotted Connecting bolt, passes through the edges of adjacent forms and tie loop. The Tightening Wedge is inserted through the slot in the connecting bolt, pulling the form sides tightly together.

In stripping, the forms are removed without the aid of prys or bars. The panels may be removed without obstruction as the ties go between the forms. Small, easily-filled holes are left by the $\frac{1}{4}$ " diameter ties. The uniform, lightweight forms stack well.

POUR CONCRETE WITH SYMONS FORMS

types of form panels

Symons Forms are available in three general types:

Wood frame forms have cross members of wood or steel. For greatest strength, steel cross members are placed 12 inches apart, but for house foundations a 24-inch spacing provides ample strength. For this purpose ordinary 2 x 4's with steel straps have also proved very satisfactory as cross members. Symons will provide free directions for building up any of these wood frame forms.

Steel frame forms have a welded steel frame which is easily attached to or detached from the plywood face.

Light weight makes magnesium frame forms a favorite with workmen. They enclose the plywood face with a sturdy frame which protects the plywood edges and assures a fine looking wall. Both steel and magnesium frame forms are only 2½ in. thick. They need only half the truck or storage space required for wood frame forms.



Waukegan Home Project, Centex Constr. Co., Dallas, Texas.



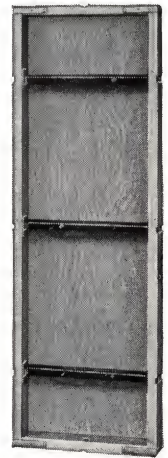
Setting up Symons Forms showing use of window buck.



Stripping Symons Forms, panels come off wall easily, ties do not bind forms.



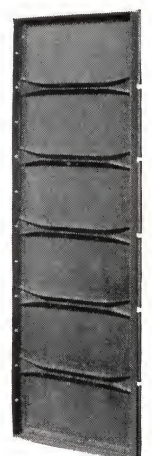
All Wood Panel,
minimum of hardware.



Light Construction Panel,
with steel ribs 24" O. C.



Magnesium Frame, lightest
form on market.



All Steel Frame, plywood
riveted to frame.

accessories

Drop hooks and level hooks make the construction of a run-way for pouring a simple process. A splash board with steel handle and guide rails slides freely along the top of forms.

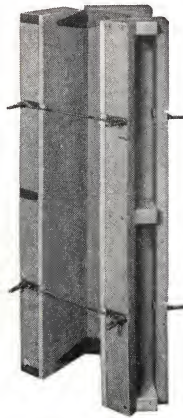
DETAILS OF CONSTRUCTION



INSIDE CORNER



OUTSIDE CORNER



BAY CORNER



PILASTER

CORNERS

All corners require inside and outside corner pieces. Outside corners are steel angles that lock adjoining forms together to make a 90° angle. Inside corners are 8 x 8 in. The forms adjacent to the outside corner are equal in width to the wall thickness plus 8 in. For example the corner forms for a 10 in. wall would be 18 in. fillers. To set-up the inside corner attach two panels to the inside corner piece passing the connecting bolts through the loops in the ties. Erection is continued toward the center of the wall. If a waler is installed, waler ties are put over the connecting bolts as the bolts are placed. The waler is not put up until one side is erected.

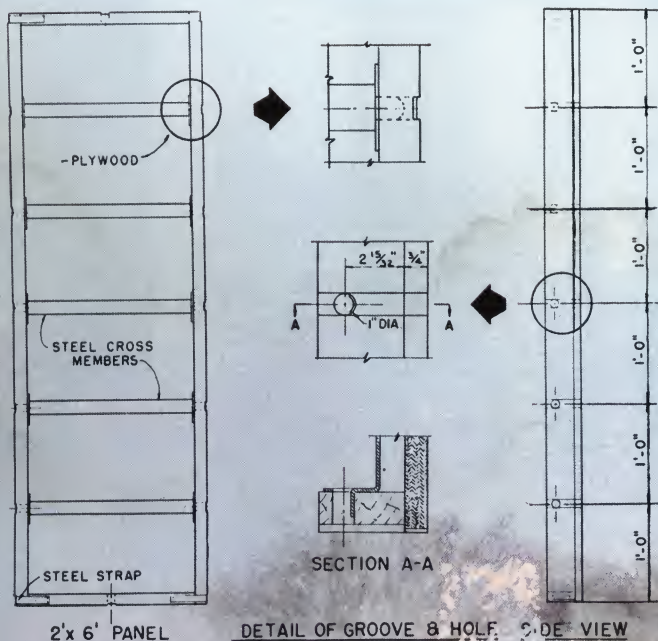
PILASTERS

The illustration above right shows a pilaster 20 in. wide, projecting 8 in. from the wall surface. Two each inside and outside corner pieces were used, the inside piece making the 8 in. depth, and two 2 in. fillers and one 16 in. filler making the 20 in. width. To erect a pilaster 18 in. wide, projecting less than 8 in. from the wall, 1 in. pilaster boards are used. They are nailed to the adjacent wall panels and secured to the 1 in. and 16 in. fillers by connecting bolts which pass through all three (see detail below). When ordering ties for the pilaster, give wall thickness and amount of projection. Ties are placed between the 16 in. and 1 in. fillers, leaving ties embedded in concrete 1 in. from the sides of the pilaster.

FILLERS

To make fillers not more than 12 in. wide, drill holes in two 2 x 4's to correspond with connecting bolt holes in panel forms. To the shoulder provided by the 2 x 4's nail 3/4-in. plywood or a 1 in. board of suitable width. One-inch and 2 in. fillers are made from 1 in. and 2 in. boards 4 3/4 in. wide. Use long connecting bolts with 1 in. and 2 in. fillers.

No matter how many pilasters or corners you have, or how much the wall is cut up, a saw will not be needed. Fillers are provided in 1, 2, 6, 8, 12, 16, 18, and 20 in. sizes with the panels. Fillers should be distributed between the panels.



NOTE: THE SPACING OF GROOVES AND HOLES FOR 4' AND 8' CORNERS AND FILLERS IS 8" ON TO ABOVE.



INSIDE CORNER

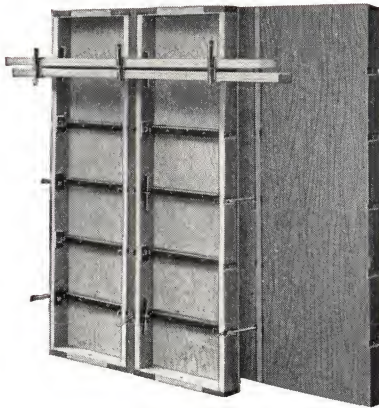


OUTSIDE CORNER
(STEEL)

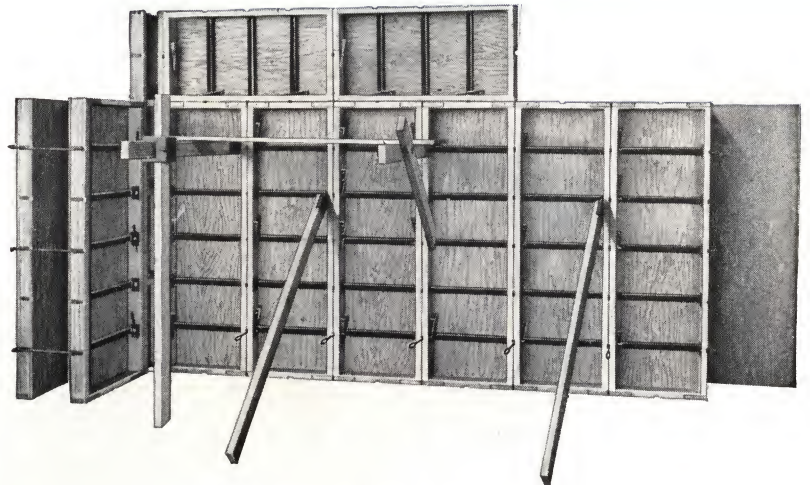


1' & 2' FILLERS

POUR CONCRETE WITH SYMONS FORMS



WALER



BRACING AND SCAFFOLDING

WALERS

Double 2 x 4 walers are used on one side at the top for alignment. As a safety measure on heavy pressure jobs, walers should also be placed on both sides of the forms at the bottom tie joint. Where forms are set above each other as for a 16 ft. wall, walers should also be placed at joint to insure neat alignment. The waler tie is threaded on the connecting bolt, and forms are forced into perfect alignment by driving a wedge through the opposite eye.

The waler plate holds the two 2 x 4 waler members, eliminating need for a pre-assembled waler. This plate also provides a hard surface against the drive of the wedge.

Waler ties are put over the connecting bolts as the bolts are placed. The waler is not put up, however, until one side is erected. See details on page 6.

CURVES

Symons Forms are readily adaptable for use on circular tanks and curved walls. Standard panels are used with V-shaped fillers at each joint. Long Connecting Bolts secure the fillers and panels together and also hold the ties in place.

Our engineering department will make a detailed layout of your job showing the exact sizes of fillers and quantities of materials required.

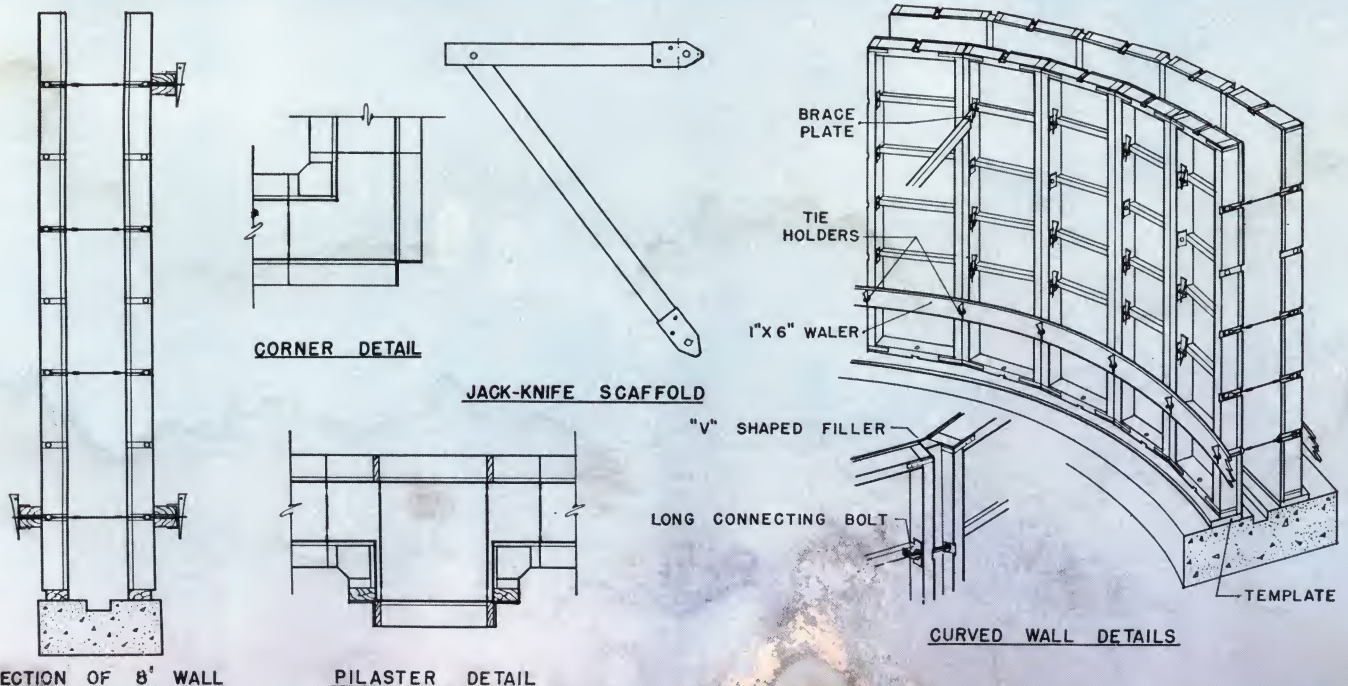
There are several different methods of aligning curved walls: plates, templates, bracing, curved walers or flat boards. Our engineers will suggest the type or combination that best suits your job.

BRACING and SCAFFOLDING

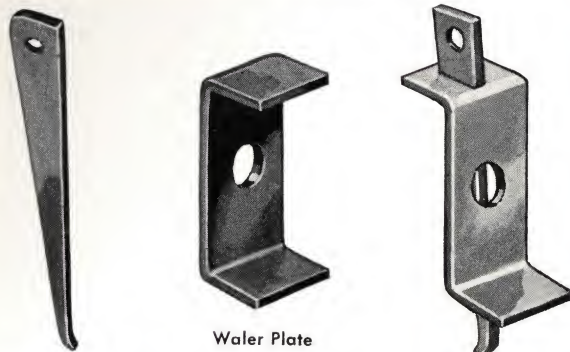
Two by four braces may be secured to the forms by means of a brace plate bolted to the frame and secured by a wedge through the connecting bolts. (See below.) Bracing can also be nailed where needed.

A scaffold for pouring concrete is constructed with runway beams which hook over the forms and clamp onto the studs. A scaffold clamp eliminates nails and saves lumber. Drop hooks bring the runway 3 in. below the top of the forms, allowing a buggy or wheelbarrow to bunt against the forms in pouring. Level hooks are used at the corners with drop hook runway beams.

A splash board, with a steel handle and guide rails, slides freely along the top of forms.



BASIC FORM HARDWARE



Tightening Wedge

Waler Plate

Wedge Plate for Washer Ties

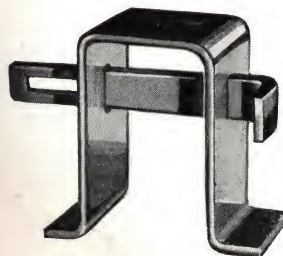


Short Connecting Bolt

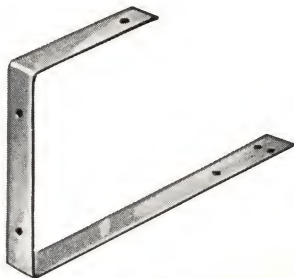
Long Connecting Bolt



Liner or Wale Tie



U Tie Holder in Panels wider than 2'



Steel Strap



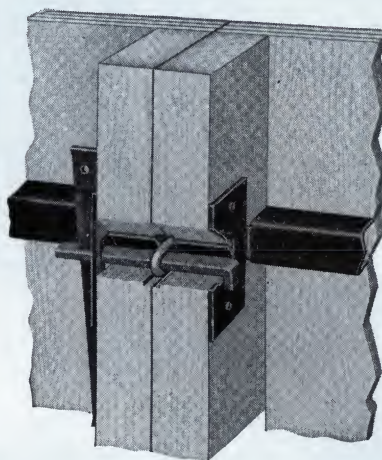
Steel Cross Member



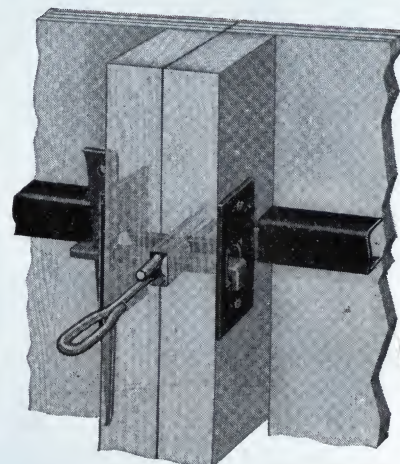
WELDED LOOP—MEANS POSITIVE SPACING
TWIST LOOP TO BREAK TIE WITHIN WALL

SEE AT WALL SURFACE
FOR A NEATER JOINT

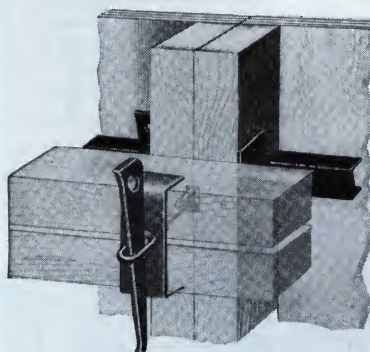
application of form hardware



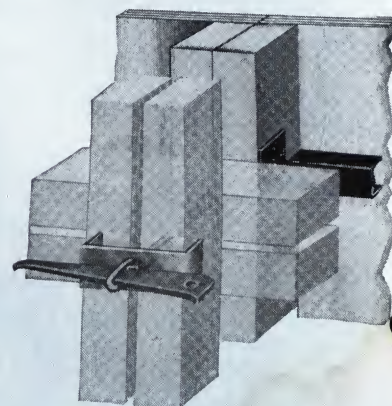
Cutaway Section of Two Adjoining Forms. Connecting bolt for panels also act as anchorage for tie rods. This bolt has a slight taper making it easy to remove.



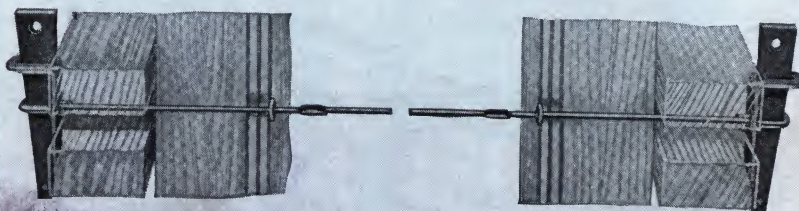
Waler tie. Protruding wire is for liner if required. Waler or liner ties operate independently of form ties and may be used an indefinite number of times.



Waler Assembly. Tie, Waler plate and wedge.



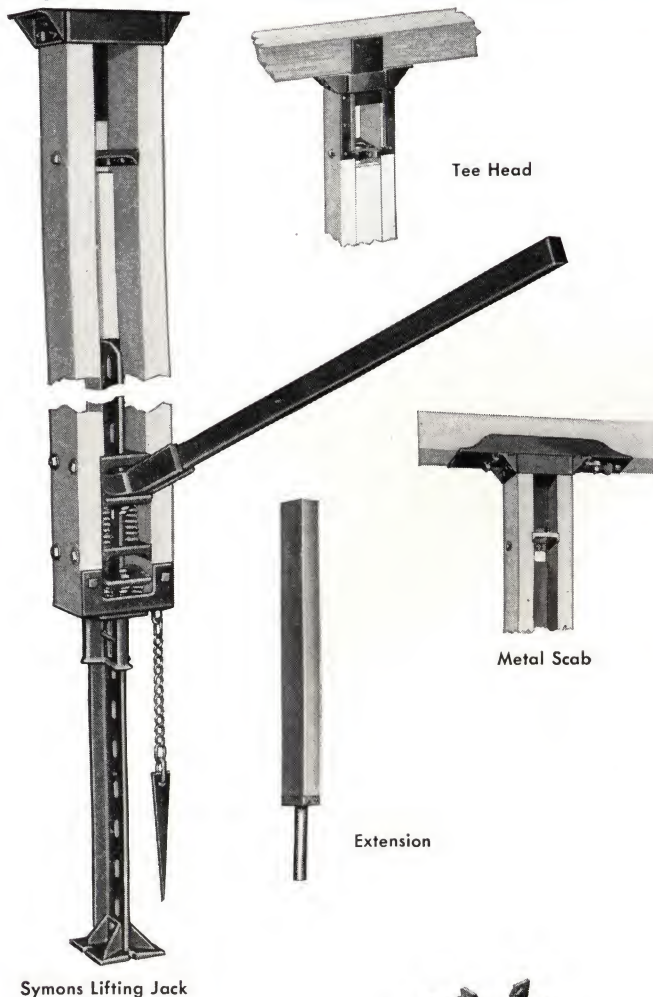
Strongbacks. On high walls or walls where ties cannot be used, double 2 x 4 strongbacks can be used for vertical alignment and for better bracing. Strongbacks are secured to the forms with strongback ties. These ties are 3/8 in. longer than waler ties and are secured in similar manner.



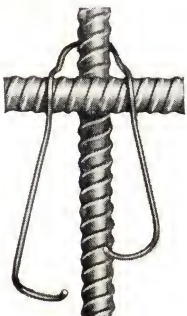
Washer spreader tie with 1 in. breakback. This tie has welded loop ends, and washer spreader that turns freely on tie allowing easy and accurate breakback, leaving no protruding ties to interfere with stripping.

POUR CONCRETE WITH SYMONS FORMS

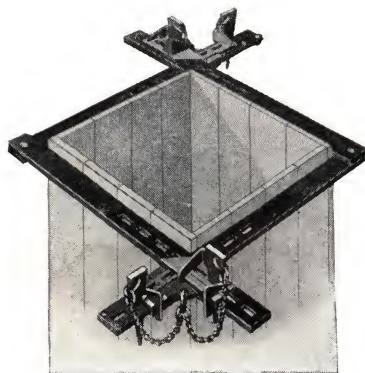
SUPPLEMENTARY EQUIPMENT



Symons Lifting Jack



Bar Tie



Symons Ever Square Column Clamp
With One-Piece Bracket



Tie Chair

SAFETY SHORES

advantages The Symons Safety Shore is a powerful jack working on a steel T iron firmly secured within a built-up wood channel. Although very light it has a load capacity which allows one man to lift 1,500 pounds. Positive action operated by a simple bar, the jack is micro-adjustable and has a safety wedge for positive lock. Each shore has an extensible metal scab in the head which may be raised for nailing to stringer.

extensions Extensions for the Symons Safety Shore are stocked in 2 ft, 4 ft, 6 ft and 8 ft lengths. The extension consists of a piece of 4 x 4 in one end of which is inserted a piece of 1 1/4 in. pipe securely bolted in place. Easily attached "T" heads and "L" heads are available.

standard size shores

| Shore Length | Length Telescoped | Length Extended | Weight |
|--------------|-------------------|-----------------|--------|
| 4 ft | 4 ft 6 in. | 7 ft 6 in. | 40 lb |
| 6 ft | 6 ft 6 in. | 11 ft 6 in. | 48 lb |
| 7 ft | 7 ft 6 in. | 13 ft | 54 lb |
| 8 ft | 8 ft 6 in. | 15 ft | 60 lb |

Ask for Clamp and Shore Catalog.

column clamps Symons Column Clamps are quickest to apply and to remove. They automatically square the column, the malleable brackets being set at 90° angles. Driving home the wedges, which are chained to the brackets, pulls the clamp tight and forces the bars to form right angles. A rivet prevents the bracket from slipping off.

The bars of Symons Column Clamps are of high strength chrome manganese steel with sharp, clean-cut, punched holes. Continuous adjustment is provided by having wedge slots in the bracket closer together than the slots in the bars.

No tools other than a hammer are required to apply Symons Column Clamps. There are no detachable parts on the two units, which are exactly alike.

Standard size Column Clamps are 36 in., 48 in. and 60 in. Special sizes up to 84 in. are reinforced for extra strength.

bar ties and tie chairs The Symons Bar Tie quickly ties reinforcing bars together for wall construction. Bar ties come in four sizes, according to the combined diameter of the two intersecting bars. The Symons Tie Chair, made of high carbon spring wire, locks the bars rigidly together, an inch above the steel is applied at about one fourth the labor cost of the ordinary manual tying with pliers. One size tie is suitable for from six to ten different combinations of bar sizes.

SYMONS FORMING SYSTEM

ERECTING FORMS

1. All forms should be clean and have a coating of oil.
2. Set corner forms in place, plumb and brace. Set the balance of the forms on one side of the wall, placing and securing panel ties as each form is erected. Waler ties are secured at the same time.
3. Double 2 x 4 walers are secured to the forms after the first side is erected. Forms are then plumbed and braced.
4. Any reinforcing rods, frames, boxes, bucks, sleeves, etc., are installed before erecting second side.
5. Secure walers to second side as required.

ASK FOR FORM ERECTION FOLDER

CARE OF FORMS

1. Clean and oil forms after every use. This will increase their life 50%; will decrease stripping time; and will improve appearance of job. Paraffin oil is recommended. It is effective, clean, available everywhere and reasonable in price.
2. Exercise care in handling, trucking and stripping. Careful handling will prevent abuse to the plywood edges. Forms should be piled face to face and back to back in trucking. Do not dump forms.
3. When not in use forms should be piled carefully to minimize weathering and to prevent rotting. Pile should have slight pitch for run off. Place old forms on top to protect from sun and rain. Place strips between forms to allow evaporation.

REMOVING FORM PLYWOOD

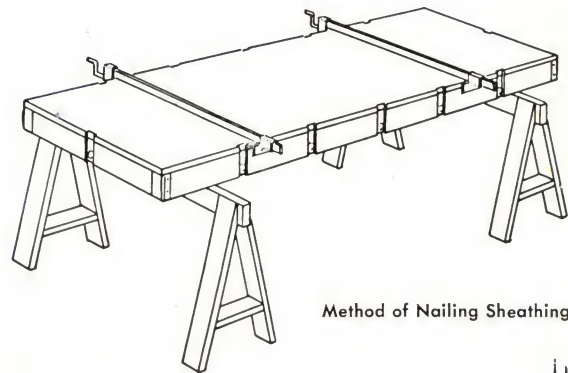
1. Remove split rivets from backside of forms with claw hammer.
2. Drive masons chisel between plywood and frame where nailed. Use 3 lb. sledge to hammer chisel. Chisel will cut through easily, providing nail is high carbon and has rings along shank similar to screw.
3. Insert wooden wedge between plywood and frame to speed operation.
4. Stripping plywood off frame or nailing plywood face to frame should take approximately 3 to 5 minutes.
5. Figure 3 nails per square foot or 1 lb. of nails per 26 square feet. Drive nails every 6" along frame.
6. Drive split rivets last. Rivets are driven against steel plate so that ends will curl.
7. Steel plate can be placed along old form supported by saw horses. Hardware, nails, split rivets, chisels, pony clamps can be secured from Symons Clamp & Mfg. Company. 2 x 4 parts of frame drilled, dadoed and cut to length also available. Also plywood cut to size and dadoed.

ASK FOR FORM MAINTENANCE FOLDER

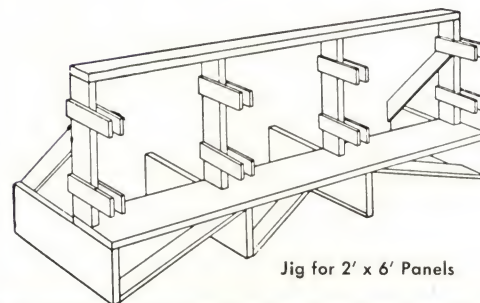
HOW TO ASSEMBLE YOUR OWN FORMS

1. Place short cross members in cleat.
2. Set side member on top of cross members and nail with 10d nails. (See sketch.)
3. Drill holes in side member using steel straps as guides.
4. Nail steel straps with 2-20d nails per strap. (See sketch.)
5. Reverse frame in jig and repeat operations 2, 3, and 4.
6. Remove frame from jig and nail straps securely with 6d nails.
7. Clamp sheathing to frame with bar or pony clamps and nail with 8d coated ring shanked nails. (See sketch.)
8. Dado sheathing. A power hand saw may be used for this purpose.
9. Secure stop plates by hammering in drive screws.

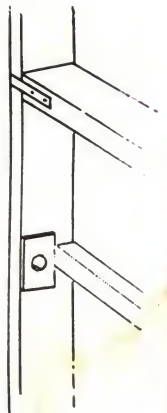
ASK FOR CONSTRUCTION DETAILS



Method of Nailing Sheathing



Jig for 2' x 6' Panels



Frame Joint

SYMONS CLAMP & MFG. CO.

4249 DIVERSEY AVENUE
CHICAGO 39, ILLINOIS
phone: DICKENS 2-5141

complete factual and technical
catalogs on request



Catalog No. F-10, "Symons Concrete Forming Equipment," 40 pages, describes the Symons Forming System, Safety Shores and Column Clamps in detail. Construction details are given, and Symons installations are illustrated. Also available is a 4 page brochure on Concrete Forming Tables for Slabs, Columns and Beams.